

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of the claims in the application.

Listing of the Claims:

1 1. (currently amended) A process for stabilizing
2 the pH of a pulp suspension at a desired pH level,
3 ~~characterized by~~ comprising increasing the alkalinity
4 of said paper making pulp suspension by adding thereto,
5 in the stock preparation of a paper machine in a paper
6 mill, a combination of an alkali metal hydroxide feed
7 and a carbon dioxide feed, each of said feeds being
8 added in an amount greater than what would be required
9 to only adjust the pH of the suspension to the desired
10 pH level, which feeds substantially counter each
11 other's pH changing effect, said feeds being provided
12 in an amount sufficient to achieve a significant
13 buffering effect of said pulp suspension while enabling
14 utilization of an excess of said hydroxide or said
15 carbon dioxide for adjusting the pH of said pulp
16 suspension and maintaining the pH at a desired level
17 from the addition of the feeds [through] throughout the
18 short circulation and formation of the paper on the
19 paper machine.

1 2. (original) Process according to claim 1,
2 characterized in that the pH of said pulp suspension is
3 adjusted to a pH between about 7 and 9 by adding an
4 excess of said alkali metal hydroxide or by adding an
5 excess of said carbon dioxide.

1 3. (original) Process according to claim 1,
2 characterized in that said alkali metal hydroxide is
3 aqueous sodium hydroxide and said carbon dioxide is
4 gaseous carbon dioxide.

1 4. (original) Process according to claim 1,
2 characterized in that said alkali metal hydroxide is
3 fed to said pulp suspension prior to the feeding of
4 said carbon dioxide.

1 5. (original) Process according to claim 1,
2 characterized in that the alkalinity of said pulp
3 suspension is increased by providing a substantially
4 equal molar amount of alkali metal hydroxide and
5 dissolved carbon dioxide, said amount being sufficient
6 to provide a significant buffering effect and about pH
7 8.

1 6. (original) Process according to claim 1,
2 characterized in that said pulp suspension is chemical
3 or mechanical pulp.

1 7. (original) Process according to claim numeral
2 6, characterized in that said pulp suspension a is
3 bleached chemical pulp.

1 8. (previously presented) Process according to
2 claim 1, characterized in that said pulp suspension
3 contains calcium carbonate filler.

1 9. (original) Process according to claim 1,
2 characterized in that said alkali metal hydroxide and
3 carbon dioxide feeds are added to said pulp suspension
4 flowing in a pipe leading to a stock preparation tank.

1 10. (original) Process according to claim 1,
2 characterized in that said alkali metal hydroxide and
3 said carbon dioxide are combined prior to feeding to
4 the pulp suspension.

1 11. (currently amended) A process for producing
2 paper comprising providing a paper making pulp

3 suspension for processing in the stock preparation of a
4 paper machine in a paper mill;

5 increasing the alkalinity of said pulp suspension
6 by adding thereto in said stock preparation a
7 combination of an alkali metal hydroxide feed and a
8 carbon dioxide feed which feeds substantially counter
9 each others pH changing effect,

10 forming said pulp suspension into a web, and
11 drying said web to form paper,

12 said feeds being provided in an amount greater
13 than that required to adjust the pH of the pulp
14 suspension to a desired level, and said feeds being
15 provided in an amount sufficient to achieve a
16 substantial buffering effect of said pulp suspension
17 while enabling utilization of an excess of said
18 hydroxide or said carbon dioxide for adjusting the pH
19 of said pulp suspension and for maintaining the pH at a
20 desired level from the addition of the feeds ~~to~~
21 throughout the short circulation and the formation of
22 the pulp suspension into a web.

1 12. (currently amended) Process according to
2 claim ~~14~~ 11, characterized in that the pH of said pulp
3 suspension is adjusted to a desired value between 7 and

4 9 by adding an excess of said alkali metal hydroxide or
5 said carbon dioxide.

1 13. (currently amended) A process for stabilizing
2 the pH of a pulp suspension at a desired pH level,
3 comprising the steps of

4 providing a paper making pulp suspension having an
5 initial pH for processing in the stock preparation of a
6 paper machine in a paper mill;

7 adding alkali metal hydroxide to the pulp
8 suspension in the stock preparation in a first amount
9 sufficient to adjust the pulp suspension to the desired
10 pH if the initial pH is lower than the desired pH;

11 adding carbon dioxide to the pulp suspension in
12 the stock preparation in a second amount sufficient to
13 adjust the pulp suspension to the desired pH if the
14 initial pH is higher than the desired pH;

15 adding alkali metal hydroxide to the pulp
16 suspension in the stock preparation in a third amount;
17 and

18 adding carbon dioxide to the pulp suspension in
19 the stock preparation in a fourth amount,

20 the third amount of metal hydroxide and the fourth
21 amount of carbon dioxide being provided in quantities
22 to substantially counter each other's pH changing

23 effect and to achieve a significant buffering effect of
24 the pulp suspension such that the pH of the suspension
25 is maintained at substantially the desired pH level
26 from the last addition of alkali metal hydroxide and
27 carbon dioxide ~~to~~ throughout the short circulation and
28 the formation of the pulp suspension into a web.

1 14. (new) Process according to claim 13, wherein
2 the step of providing said paper making pulp suspension
3 includes adding water to bales of pulp or adding water
4 to pulp of increased consistency coming from a pulp
5 mill.

1 15. (new) Process according to claim 13, wherein
2 said alkali metal hydroxide is sodium hydroxide and
3 said third amount of sodium hydroxide and said fourth
4 amount of carbon dioxide provide a buffering
5 combination and said third amount and fourth amount,
6 respectively, is equal to between 0.5 and 5 kg/ton dry
7 cellulose.

1 16. (new) A process for stabilizing the pH of a
2 pulp suspension at a desired pH level, comprising
3 providing a papermaking pulp suspension and increasing
4 the alkalinity of said paper making pulp suspension by

5 adding to the circulation system of pulp and white
6 water in the stock preparation of a paper machine in a
7 paper mill, a combination of an alkali metal hydroxide
8 feed and a carbon dioxide feed, each of said feeds
9 being added in an amount greater than what would be
10 required to only adjust the pH of the suspension to the
11 desired pH level, which feeds substantially counter
12 each other's pH changing effect, said feeds being
13 provided in an amount sufficient to achieve a
14 significant buffering effect of said pulp suspension
15 while enabling utilization of an excess of said
16 hydroxide or said carbon dioxide for adjusting the pH
17 of said pulp suspension and maintaining the pH at a
18 desired level from the addition of the feeds throughout
19 the short circulation and formation of the paper on the
20 paper machine.

1 17. (new) Process according to claim 16, wherein
2 the step of providing said paper making pulp suspension
3 includes adding water to bales of pulp or adding water
4 to pulp of increased consistency coming from a pulp
5 mill.

1 18. (new) Process according to claim 16, wherein
2 said alkali metal hydroxide feed is a sodium hydroxide

3 feed of from about 0.5 kg/ton to about 5 kg/ton of dry
4 cellulose and said carbon dioxide feed is equal to from
5 about 0.5 kg/ton to about 5 kg/ton of dry cellulose.

1 19. (new) A process for producing paper
2 comprising adding water to bales of pulp or to pulp of
3 increased consistency from a pulp mill to provide a
4 paper making pulp suspension for processing in the
5 stock preparation of a paper machine in a paper mill;
6 increasing the alkalinity of said pulp suspension
7 in said stock preparation by adding thereto a
8 combination of an alkali metal hydroxide feed and a
9 carbon dioxide feed which feeds substantially counter
10 each others pH changing effect,
11 forming said pulp suspension into a web, and
12 drying said web to form paper,
13 said feeds being provided in an amount greater
14 than that required to adjust the pH of the pulp
15 suspension to a desired level, and said feeds being
16 provided in an amount sufficient to achieve a
17 substantial buffering effect of said pulp suspension
18 while enabling utilization of an excess of said
19 hydroxide or said carbon dioxide for adjusting the pH
20 of said pulp suspension and for maintaining the pH at a
21 desired level from the addition of the feeds throughout

22 the short circulation and the formation of the pulp
23 suspension into a web.

1 20. (new) Process according to claim 19, wherein
2 said alkali metal hydroxide feed is a sodium hydroxide
3 feed of from about 0.5 kg/ton to about 5 kg/ton of dry
4 cellulose and said carbon dioxide feed is from about
5 0.5 kg/ton to about 5 kg/ton of dry cellulose.

1 21. (new) Process according to claim 1, wherein
2 said paper making pulp suspension is provided by adding
3 water to bales of pulp or adding water to pulp of
4 increased consistency coming from a pulp mill.

1 22. (new) Process according to claim 1, wherein
2 said alkali metal hydroxide feed is a sodium hydroxide
3 feed of from about 0.5 kg/ton to about 5 kg/ton of dry
4 cellulose and said carbon dioxide feed is from about
5 0.5 kg/ton to about 5 kg/ton of dry cellulose.

1 23. (new) Process according to claim 11, wherein
2 the step of providing said paper making pulp suspension
3 includes adding water to bales of pulp or adding water
4 to pulp of increased consistency coming from a pulp
5 mill.

1 24. (new) Process according to claim 11, wherein
2 said alkali metal hydroxide feed is a sodium hydroxide
3 feed of from about 0.5 kg/ton to about 5 kg/ton of dry
4 cellulose and said carbon dioxide feed is from about
5 0.5 kg/ton to about 5 kg/ton of dry cellulose.

1 25. (new) A process for stabilizing the pH of a
2 pulp suspension at a desired pH level, comprising
3 providing a papermaking pulp suspension in a paper mill
4 after a pulp mill and increasing the alkalinity of said
5 pulp suspension by adding thereto, in the stock
6 preparation of a paper machine in said paper mill, a
7 combination of an alkali metal hydroxide feed and a
8 carbon dioxide feed, each of said feeds being added in
9 an amount greater than what would be required to only
10 adjust the pH of the suspension to the desired pH
11 level, which feeds substantially counter each other's
12 pH changing effect, said feeds being provided in an
13 amount sufficient to achieve a significant buffering
14 effect of said pulp suspension while enabling
15 utilization of an excess of said hydroxide or said
16 carbon dioxide for adjusting the pH of said pulp
17 suspension and maintaining the pH at a desired level
18 from the addition of the feeds throughout the short

19 circulation and formation of the paper on the paper
20 machine.

1 26. (new) A process according to claim 25,
2 wherein said feeds are added to the circulation of pulp
3 and white water of said paper machine.